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**Subject:** Fox News (4-11) Energy in America: The fight over fracking reveals facts and some fiction

# Energy in America: The fight over fracking reveals facts and some fiction

By John Roberts

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It is the process behind a new boom in domestic supplies of natural gas. Hydraulic fracturing -- when thousands of gallons of water, chemicals and sand are pumped into a deep well at extremely high pressure, creating cracks in methane-bearing shale, allowing the gas to flow to the surface.

It is also a rallying point for opponents of the method, who charge that cracking rock under that kind of pressure creates fissures that pollute underground drinking water with everything from methane to toxic chemicals.

So, what is fact? What is fiction?

Scott Anderson is the Environmental Defense Fund's point man on gas exploration. He told Fox News, "If we're talking about whether or not the fractures that have been created by 'frack' jobs have been known to intersect drinking water aquifers, the fact is there have been no confirmed cases of that happening."

In states like Pennsylvania, the gas rich Marcellus shale lies about 6,000 feet deep. That's where the hydraulic fracturing takes place. The deepest aquifers run to about 1,000 feet below ground. That's 5,000 feet of separation, much of it impermeable rock.

Ray Walker is the COO of Range Resources. Range has drilled some 350 wells in Pennsylvania. "Any way you look at it," Walker told Fox News, "it is hard to imagine that anything we can do at 6,500 feet would ever approach the surface."

But there is a risk to water wells from gas drilling. Gas companies say it is in those first few hundred feet where the borehole penetrates water-bearing rock. According to Walker, "This is a critical, critical time when you are drilling the well to actually get that isolated correctly."

To isolate the well from the aquifer, drilling companies line the borehole with steel casing, then pump in cement to seal the space between the casing and rock. By the time the well is fully drilled, there is a "layer cake" of nested casing and cement as much as 2 feet in diameter going through the aquifer. It should provide an impermeable barrier between the flowing gas and drinking water.

However, things don't always go according to plan. In Bainbridge, Ohio, in 2008, a drilling company failed to properly cement its well. Gas escaped into groundwater, contaminating several wells. One home with a well in the basement blew up when it filled with methane.

A year later, in Dimock, Pa., the wells of more than a dozen homes were contaminated by methane. The state Department of Environmental Protection blamed a faulty cement job on a nearby Cabot well. The well was sealed and abandoned. The EPA tested the residents' water earlier this year and just pronounced it safe to drink. But Craig and Julie Sautner, who have been living on water trucked in for two years aren't buying it. Julie Sautner doesn't trust the EPA. "Well, first of all," she told Fox News, "it's a political year and I think they are going to say what they need to say to make everyone happy." Despite the EPA seal of approval, the Sautners can still collect enough methane from their

well in a plastic gallon jug to light it on fire.

Fifteen miles up the road in Franklin Forks, Pa., Matt and Tammy Manning have a similar problem. In December, their well water turned gray. Then the well started erupting. The DEP measured extremely high methane levels in the well. Just a few thousand feet away, two new gas wells had just been drilled.

Matt Manning told Fox News, "When we took a shower in the bathroom, we were supposed to leave the door open, the window open, fan going, to make it as quick as possible because of the small space and methane can just build."

The Mannings suspect the gas came from wells drilled by WPX Energy. WPX told Fox News its wells are too far away, and insists they were properly cemented. "We actually drilled a monitoring well next to our well," says WPX's Susan Oliver, "and we got no methane back, so our cement job was done completely."

The DEP is investigating where the gas originated, by "fingerprinting" the methane through isotope tests. They want to know-- is it from WPX's well? -- or did it migrate from nearby Salt Springs State Park, where shallow pockets of methane bubble to the surface. The test results are beginning to come back, but at this point are incomplete. Another theory being explored -- the first few thousand feet of drilling use compressed air to run the bit and clear drill cuttings. Could high air pressure in the well bore have stirred up an aquifer and pushed a shallow pocket of gas toward the water wells? The DEP should soon know.

So how frequently do poorly constructed wells leak? A study by MIT looked at thousands of wells drilled across the country and documented 20 cases where methane had contaminated ground water. The EDF's Scott Anderson quotes statistics that 10 to 15 percent of cement jobs are at risk of leaking if remedial cementing is not done. Range Resources COO Ray Walker disputes that number, saying less than 1 percent of wells need corrective action.

"There is nothing that is 100 percent perfect in life," says Walker. "But we do know -- through years and years and millions of wells -- what it takes to prevent gas migration."

The key is doing it right. Range Resources takes extra steps to insure its wells don't leak. And, says Walker, if it looks like the cementing job isn't taking correctly, they'll plug that well and drill another.

The shale gas boom holds the promise of inexpensive natural gas -- potentially for decades. It may even help fuel an economic recovery based on cheap energy. As more wells are drilled, they will come ever closer to homes and humans. So it will be incumbent on the industry to use the best practices to insure that gas and water don't mix.

Read more: <http://www.foxnews.com/us/2012/04/11/energy-in-america-no-evidence-that-fracking-pollutes-well-water/print###ixzz1rpLzZXYc>

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